

REMARKS

In the above-captioned Office Action, the Examiner has rejected Claims 1-5 under 35 U.S.C. §103(a) for being unpatentable over the Muggli et al. reference. The Examiner has also objected to the drawings as being Informal.

In response, formal drawings have been submitted. Independent claim 1 has been amended to recite a passive sensor that is remote from the opto-electronics unit, and also to recite a passive sensor having collimating lens and mirror structure that cooperate to establish a single optical path for optical signals, to correct informalities and for clarity. Claims 2 and 3 have been amended to correct informalities, and to properly depend from amended independent claim 1. Support for these amendments can be found in the Specification in paragraphs 11, 12 and 15, and in Figures 1-4. Claims 4 and 5 have been canceled. Claims 1-3 remain pending.

Objections to the Drawings

With respect to the Examiner's objections to the drawings, formal drawings have been prepared to correct informalities and to comply with 37 CFR 1.121(d); the formal drawings are submitted herewith. Thus, Applicant asserts that the Examiner's objection to the drawings has been overcome, and the objection should be withdrawn.

Rejections Under 35 U.S.C. §103(a)

With respect to the rejections of claims 1-5 for being unpatentable under §103(a) over the Muggli et al. reference, independent claim 1 has been amended to recite a smoke detector system having a passive sensor that is remote from the opto-electronics unit. Muggli et al. does not teach a system wherein a passive sensor is remotely located from the opto-electronics unit. Instead, and as the Examiner states, Muggli et al. cites a measuring radiation receiver S_M (which is analogous to the passive sensor of Applicant's

invention) and a comparison radiation receiver S_V and evaluation circuit (which together are analogous to Applicant's opto-electronics unit), that are co-located within a housing. Please see Col. 2, lines 35-65 and Col. 12, lines 46-49 in Muggli et al.

Further, from reference to Col. 5, lines 23-26 and Fig. 8, it can be seen that Muggli et al. discloses structure wherein sensor S_M is electrically connected to the evaluation circuit (the evaluation circuit is analogous to the opto-electronic unit of the present invention). This is very different from the invention claimed in amended independent claim 1. Please note that one of the goals of Applicant's invention is to devise a smoke detector with a passive sensor (within the context of Applicant's specification, "passive" means that the sensor does not require electricity for operation, see paragraph 15), so that the sensor can be placed at great distances from the opto-electronics unit relative to the prior art. Thus, the device disclosed in Muggli et al. does not teach or suggest remote placement of the sensor from the opto-electronics unit because the sensor in Muggli et al. requires power and must be electrically connected to the opto-electronics unit.

Applicant has also amended independent claim 1 to recite a passive sensor and mirror combination that allow for travel of the input optical signals and reflected optical signal back along the same optical axis within the sensor. Muggli et al. recites multiple optical transmitters L_G and L_R and multiple receivers S_M and S_V that cooperate to generate optical signal paths which are not coaxial (Please see Figs. 1-7). Because Muggli et al. uses at least two different optical transmitter and optical receivers, the Muggli et al. reference does not disclose a optical signal that is reflected back along the same optical axis as the generated signal entering the sensor. In fact, if the optical signal in Muggli et al. travels back along the same axis (as recited in Applicant's amended independent claim 1), the device in Muggli et al. will not work. Thus, in this regard the Muggli et al. reference actually teaches away from the claimed invention as recited in amended independent claim

1

Dependent claims 2 and 3 contain the same limitations as amended independent

claim 1, and are allowable for the same reasons. Thus, the rejection of any claims for being unpatentable over the Muggli et al. reference is improper. Reconsideration and withdrawal of these rejections is respectfully requested.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated or rendered moot. Applicant has made a bona fide effort to properly amend the claims, and Applicant believes that a full and complete reply has been made to the outstanding Office Action, and that the present application is in a condition for allowance. Accordingly, a Notice to that effect is most respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided. Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Dated: April 25, 2007

Respectfully submitted,



Arthur K. Samora, Reg. No. 43,079
Office of Counsel, Code 004
Naval Surface Warfare Center, Carderock Division
9500 MacArthur Blvd.
West Bethesda, MD 20817